



I, Kumiko Kawai of Tranomon East Building, 7-13, Nishi-Shimbashi 1-chome, Minato-ku, Tokyo 105-8408, Japan, hereby declare that I am conversant with the Japanese and the English languages and that I am the translator of the document attached and certify that to the best of my knowledge and belief the following is a true and correct English translation of the specification contained in the Japanese Patent Application No. 2003-012405.

Signed, September 4, 2007

A handwritten signature in black ink, appearing to read "Kumiko Kawai", written over a horizontal line.

Kumiko Kawai

Patent Department

**Patent Office
Japanese Government**

This is to certify that the annexed is a true copy of the following application as filed with this Office.

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[Title of the Invention] Superposition type Portable Terminal Unit

[Claims]

[Claim 1] A superposition type portable terminal unit in which a first housing having at least a display section and a second housing having at least an operation section, in a close state where said display section and said operation section face in the same direction and the housings are superimposed on each other so that the operation section of the second housing is covered with the first housing, are coupled at their ends by a coupling part having an axis in a direction where the both housings are pierced , characterized in that:

in case that said first housing is turned in relation to said second housing about said axis from said close state in any of a clockwise direction and a counterclockwise direction, the unit is put in an open state; and

a control unit is provided, which selects a screen so that a first screen is displayed in said display section in case that said first housing is turned in relation to said second housing clockwise from said close state, and so that a second screen is displayed in said display section in case that said first housing is turned in relation to said second housing counterclockwise from said close state.

[Claim 2] The superposition type portable terminal unit according to Claim 1, wherein said first screen and said second screen

are different from each other in application.

[Claim 3] The superposition type portable terminal unit according to Claim 1, wherein in said close state, a standby mode screen is displayed on said display section; and in said open state, one of said first screen and said second screen becomes an address book screen and the other becomes a menu selection screen.

[Claim 4] The superposition type portable terminal unit according to Claim 1, wherein in said close state, an address book screen is displayed in said display section; and in said open state, one of said first screen and said second screen becomes a standby mode screen during call-making and the other becomes a message creating screen.

[Claim 5] The superposition type portable terminal unit according to Claim 1, wherein in said close state, an address book screen is displayed in said display section; and in said open state, one of said first screen and said second screen becomes a standby mode screen during call-making and the other becomes a message reception box screen.

[Claim 6] The superposition type portable terminal unit according to Claim 1, wherein in said close state, a message reception box screen is displayed in said display section; and in said open state, one of said first screen and said second screen becomes a standby mode screen during call-making and the other becomes a message creating screen.

[Claim 7] The superposition type portable terminal unit

according to Claim 1, wherein in said close state, an incoming- call history screen is displayed in said display section; and in said open state, one of said first screen and said second screen becomes a standby mode screen during call-making and the other becomes a message creating screen.

[Claim 8] The superposition type portable terminal unit according to Claim 1, wherein in said close state, an image reproduction screen on which an image is reproduced is displayed in said display section; and in said open state, one of said first screen and said second screen becomes an image editing screen and the other becomes a message creating screen on a message to which an image is automatically attached.

[Detailed Description of the Invention]

[0001]

[Technical Field to which the Invention Belongs]

The present invention relates to a portable terminal unit such as a mobile telephone and a PDA (Personal Digital Assistant), and specifically to a superposition type portable terminal unit comprising plural housings superposably coupled to each other.

[0002]

[Prior Art]

[Patent Reference 1] JP-A-11-215218

[Patent Reference 2] JP-A-2002-141984

[Patent Reference 3] JP-A-2002-135380

[Patent Reference 4] JP-A07-288860

[0003]

Hitherto, as a folded-up type portable terminal unit which can fold two housings, a folded-up type mobile telephone 2 as shown in Fig. 17 has been generally known. In this folded-up type mobile telephone 2, a display surface 12 such as a LCD (Liquid Crystal Display) which displays output data and a speaker 13 are provided on an inner surface 10 of one housing 4, and an operation section 16 and a microphone 15 are provided on an inner surface 14 of the other housing 6.

[0004]

In the operation section 16, various kinds of keys can be arranged, for example, a cross key 18 which can give instructions in up-and-down and left-and-right directions so that items displayed on the display surface 12 can be selected, and a ten key 20 by which a numeral and a character can be entered.

[0005]

In such the folded-up type mobile telephone 2, a selection screen 22 as shown in Fig. 18 is displayed on the display surface 12 so that a user can select any of its various functions which he wants to use.

[0006]

However, in the folded-up type mobile telephone 2 as shown in Fig. 17, there is the following problem: when one housing 4 and the other housing 6 come closest to each other and they are folded, before they are opened so as to separate from each other, the screen

displayed on the display surface 12 cannot be seen in a folded-up state, and data output on the display surface 12 cannot be read.

[0007]

In order to solve such the troublesome problem that labor for opening the housings 4 and 6 of the folded-up type mobile telephone 2 is required to read the display surface, a portable terminal unit has been proposed, in which a display surface 12 faces to the outside not only in an open state but also in a folded-up state or a state corresponding to the folded-up state.

[0008]

As such the portable terminal unit, there are superposition type portable terminal units as disclosed in, for example, the Patent reference 1, Patent reference 2, and Patent reference 3. In these superposition type portable terminal units, in a state where two coupled housings are opened, similarly to a posture of the folded-up type mobile telephone 2 shown in Fig. 17, a display surface provided for one housing faces to the outside.

[0009]

However, these superposition type portable terminal units as disclosed in the Patent reference 1 to Patent reference 3 are different from the folded-up type mobile telephone 2 in that one housing can be twisted at an angle of 180° in a coupling part of two housings and the housings can be folded and superimposed. Therefore, the two housings can be superimposed so that the display surface faces to the outside.

[0010]

Further, another conventional superposition type portable terminal unit has been disclosed in the Patent reference 4. In this conventional superposition type portable terminal unit, one housing provided with a display surface and the other housing provided with an operation section, in a state where the display surface and the operation section face in the same direction and the housings are superimposed, are coupled to each other at their end portions by an axis provided in a direction penetrating these two housings.

[0011]

In this superposition type portable terminal unit, one housing can turn in relation to the other housing about the axis at an angle of 180° thereby to open the housings. Further, since the two housings can remain superimposed with the display surface facing to the outside, even if a user does not open the two housings, he can see the screen displayed on the display surface.

[0012]

[Problem that the Invention is to Solve]

In such the superposition type portable terminal units, even if the two housings are not opened, the screen displayed on the display surface can be seen. However, in case that an operation in the operation section is required, after all, one of the two housings must be turned at an angle of 180° thereby to put the housings in the open state from the close state.

[0013]

In this case, operations for making the open state from the close state are somewhat different according to the kind of superposition type portable terminal unit. However, any of their operations is simple, and complex operations other than their operations cannot be performed. Therefore, though the operation for making the open state from the close state is an operation to be always performed in order to make the open state, adding any other functions to this opening operation itself is not taken into consideration at all. Therefore, there is a problem that the operating performance of the superposition type portable terminal unit cannot be improved in this point.

[0014]

To the contrary, also in case that the superposition type portable terminal unit is put in the close state from the open state, adding any other functions to this closing operation itself is not taken into consideration at all. Therefore, there is a problem that the operating performance of the superposition type portable terminal unit cannot be improved also in this point.

[0015]

Therefore, in view of the above problem, it is an object of the invention to provide a superposition type portable terminal unit in which functions other than the opening and closing functions are added to the opening and closing operations thereby to improve the operating performance of the portable terminal unit.

[0016]

[Means for Solving the Problem]

In order to solve the above problem, a superposition type portable terminal unit of the invention in which a first housing having at least a display section and a second housing having at least an operation section, in a close state where the display section and the operation section face in the same direction and the housings are superimposed on each other so that the operation section of the second housing is covered with the first housing, are coupled at their ends by a coupling part having an axis in a direction where the both housings are pierced is characterized in that:

in case that the first housing is turned in relation to the second housing about the axis from the close state in any of a clockwise direction and a counterclockwise direction, the unit is put in an open state; and

a control unit is provided, which selects a screen so that a first screen is displayed in the display section in case that the first housing is turned in relation to the second housing clockwise from the close state, and so that a second screen is displayed in the display section in case that the first housing is turned in relation to the second housing counterclockwise from the close state.

[0017]

According to such the superposition type portable terminal unit, the first screen displayed in the display section in case that the first housing is turned in relation to the second housing clockwise, and the second screen displayed in the display section

in case that the first housing is turned in relation to the second housing counterclockwise are different from each other. Therefore, since various functions can be added to the opening and closing operations, the operating performance of the superposition type portable terminal unit can be improved.

[0018]

Further, since the operations by opening and closing the first housing and second housing are entirely different from the operations by a ten key and a cross key, and a user can perform the opening and closing operations in clear distinction from the operations by the ten key and the cross key, the operating performance of the superposition type portable terminal unit can be improved similarly.

[0019]

[Mode for Carrying Out the Invention]

Embodiments of a superposition type portable terminal unit according to the invention will be specifically described below with reference to drawings.

[0020]

Figs. 1 to 16 are reference diagrams for explaining a superposition type mobile telephone 30 (corresponding to the superposition type portable terminal unit) according to one embodiment of the invention. In the superposition type mobile telephone 30 shown in these figures, parts similar to those in the conventional folded-up type mobile telephone 2 are denoted by the same reference numerals, and the description on the constitution

similar to that in the conventional telephone is omitted.

[0021]

This superposition type mobile telephone 30, as shown in Figs. 1 and 2, comprises a first housing 32 and a second housing 34, and the first and second housings 32 and 34 are coupled at their ends by a coupling part 36 having an axis in a direction penetrating the housings 32 and 34.

[0022]

In the superposition type mobile telephone 30, a display section 11 is provided for the surface of the first housing 32 on the opposite side to the second housing 34 side so that a display surface 12 can be seen from the outside even in a state where the first housing 32 and the second housing 34 are superimposed.

[0023]

For the second housing 34, a main operation section 17 corresponding to the operation section 16 of the conventional folded-up type mobile telephone 2 is provided. Further, a side key 42 and a three-directional lever 44 which function as auxiliary operation sections are provided on the respective side surfaces 38 and 40 of the first housing 32 and the second housing 34 so that the operation can be performed even in a state where the first housing 32 and the second housing 34 are closed.

[0024]

Further, on the surface of the first housing 32 where the display section 11 is arranged, a speaker 13 is provided at an end

on the opposite side to the coupling part 36 side. On the surface of the second housing 34 where the main operation section 17 is arranged, a microphone 15 is provided at an end on the opposite side to the coupling part 36 side.

[0025]

In the superposition type mobile telephone 30, in case that the first housing 32 is turned about the coupling part 36 clockwise (in the direction of an arrow a in Fig. 1) at an angle of 180° from the state where the first housing 32 and the second housing 34 are superimposed, as shown in Fig. 3, the superposition type mobile telephone 30 can be put in an open state where the main operation section 17 provided for the second housing 34 is seen on the outside.

[0026]

Further, also by turning the first housing 32 counterclockwise (direction of an arrow b) at an angle of 180° , as shown in Fig.1, the superposition type mobile telephone 30 can be put in the open state where the main operation section 17 provided for the second housing 34 is seen on the outside as shown in Fig. 3.

[0027]

In any of the clockwise direction and the counterclockwise direction, the display surface 12 turns in the state where it faces in the same direction as the main operation section 17 faces. Therefore, the display surface 12 can be seen from the outside also in the open state.

[0028]

In the invention, the states shown in Figs. 1 and 2 are taken as a [superposition state] or a [close state], and the states shown in Figs. 3 and 4 are taken as an [open state]. To put the housings in the [open state] from the [close state] is referred to as an [opening operation], and to put the housings in the [close state] from the [open state] is referred to as a [closing operation].

[0029]

Next, the main operation section 17, the side key 42 and the three-directional lever 44 will be described. In the superposition type mobile telephone 30, as shown in Fig. 3, in the open state of the first housing 32 and the second housing 34, a cross key 18 and a ten key 20 in the main operation section 17 of the second housing 34 can be operated. At this time, in order to prevent the erroneous operation, the side key 42 and the three-directional lever 44 are made inactive by control.

[0030]

Further, the superposition type mobile telephone 30, as shown in Fig. 4, includes a camera 46, a mirror 48, and a microphone 50 for image-recording on its rear surface, of which the camera 46 and the microphone 50 for image-recording operate in any of the close state and the open state.

[0031]

The three directional lever 44 used in the close state, as shown in Fig. 5, can be turned up (in the direction of an arrow c) and down (in the direction of an arrow d), and also can be pushed

in the center direction (in the direction of an arrow e).

[0032]

In a standby mode in the close state, in case that a selection screen 22 as shown in Fig. 18 is displayed on the display surface 12, the three-directional lever 44 is turned in the direction of the arrow c or in the direction of the arrow d thereby to select an item, and then pushed in the center direction (in the direction of the arrow e) thereby to set the selected item, so that its item is started.

[0033]

Further, the side key 42 can be pushed into the first housing 32, and setting of the item performed by operating the three-directional lever 44 in the center direction can be canceled by the operation of the side key 42, so that the present display screen can be returned to the display screen of one before.

[0034]

Fig. 6 is a block diagram showing a circuit of the superposition type mobile telephone 30. A turn detecting section 64 detects, as shown in Fig. 7, from the state of the first housing 32, the close state and open state, a state (B1 state in Fig. 7) where the first housing 32 turns clockwise at an angle of 90° from the close state, and a state (B2 state in Fig. 7) where the first housing 32 turns counterclockwise at an angle of 90° from the close state; and outputs the corresponding signal to a CPU 62 (control section). As such the turn detecting section 64, a volume resistance, a mechanical switch, or a sensor can be used.

[0035]

The CPU 62, upon reception of the signal from the turn detecting section 64, judges whether the superposition type mobile telephone 30 is in the close state or in the open state, or the turn direction of the first housing 32.

[0036]

For example, when the superposition type mobile telephone 30 is in the close state, in case that a user performs the clockwise opening operation, the turn detecting section 64 detects by this operation the state of the first housing 32 in the following order: the close state, the B1 state, and the open state, and next the turn detecting section 64 outputs the corresponding signal to the CPU 62. Therefore, on the basis of this signal, the CPU 62 can judge that the first housing 32 turns clockwise from the close state and the housings are put in the open state.

[0037]

Further, in case that the user performs the counterclockwise opening operation, the turn detecting section 64 detects the state of the first housing 32 in the following order: the close state, the B2 state, and the open state. The CPU 62, upon reception of the corresponding signal, can judge that the first housing 32 turns counterclockwise from the close state and the housings are put in the open state.

[0038]

Similarly, when the superposition type mobile telephone 30

is in the open state, in case that the user performs the clockwise or counterclockwise closing operation, and the turn detecting section 64 detects the state of the first housing 32 in the following order: the open state, the B2 state, and the close state; or the open state, the B1 state, and the close state, the CPU 62 can judge that the first housing 32 turns clockwise or counterclockwise from the open state and the housings are put in the close state.

[0039]

Further, the CPU 62, in addition to the judges of the state and the turn direction of the first housing 32, performs the control of the display section 11, the main operation section 17, the side key and three direction lever 44 as the auxiliary operation section, a ROM 66, a RAM, and a radio section 70 connected to an antenna portion 72 thereby to execute various functions.

[0040]

Further, in the ROM 66, an application (software) started on the basis of the judgment of the state and the turn direction of the first housing 32 by the CPU, and other applications are stored. In the RAM 68, data of whether the first housing 32 is in the close state or in the open state is stored. Further, the radio section 70 and the antenna portion 72 are used for communication with a base station by radio.

[0041]

Next, the operation of the superposition type mobile telephone 30 will be described. Figs. 8 to 16 are diagrams for explaining

various embodiments with reference to various screens 80 to 132 displayed on the display surface 12 by the operation of the superposition type mobile telephone 30.

[0042]

Firstly, with reference to Fig. 8, under display of an address book screen 82 obtained by performing the clockwise opening operation from a state where a standby mode screen 80 is displayed in the close state, and under display of a menu selection screen 84 obtained by performing the counterclockwise opening operation, a first embodiment of the superposition type mobile telephone 30 will be described.

[0043]

In case that time more than a fixed time has passed with the superposition type mobile telephone 30 not operated in the close state, the standby mode screen 80 is displayed on the display surface 12. In a lower portion 80a of the standby mode screen 80, a guide is displayed, which indicates that the address book screen 82 is displayed by the clockwise opening operation, and the menu selection screen 84 is displayed by the counterclockwise opening operation.

[0044]

In case that the user performs the clockwise opening operation from this state, the turn detecting section 64 detects this operation and outputs an signal corresponding to this operation to the CPU 62 (refer to Fig. 6). The CPU judges on the basis of this signal that the telephone 30 has been put in the open state by the clockwise turn

of the first housing from the close state, and reads from the ROM 66 an application which is set so as to be started in case that the telephone 30 has been put in the open state by the clockwise turn of the first housing when the standby mode screen 80 is displayed in the close state.

[0045]

In the ROM 66, since an application of address book which is started in case that the telephone 30 has been put in the open state by the clockwise turn is set, the CPU 62 starts the application of address book on the basis of this setting and displays the address book screen 82 on the display surface 12.

[0046]

Further, in case that the user performs the counterclockwise opening operation from the state where the standby mode screen 80 is displayed on the display surface 12 in the close state thereby to put the telephone in the open state, the turn detecting section 64 detects this operation and outputs an signal corresponding to this operation to the CPU 62 (refer to Fig. 6). The CPU judges on the basis of this signal that the telephone 30 has been put in the open state by the counterclockwise turn of the first housing from the close state, and reads from the ROM 66 an application which is set so as to be started in case that the telephone 30 has been put in the open state by the counterclockwise turn of the first housing when the standby mode screen 80 is displayed in the close state.

[0047]

In the ROM 66, since an application of menu selection screen 84 as shown in Fig. 8, which is displayed in case that the telephone 30 has been put in the open state by the counterclockwise turn is set, the CPU 62 displays the menu selection screen 84 on the display surface 12 on the basis of this setting.

[0048]

Further, Fig. 9 shows a second embodiment as another embodiment than the embodiment shown in Fig. 8. Herein, in case that the user performs the counterclockwise opening operation from the state where a standby mode screen 86 is displayed in the close state thereby to put the telephone in the open state, an application of mail message may be started and an E-mail menu screen 90 may be displayed.

[0049]

Thus, in case that the application to be started is different from the application shown in Fig. 8, it is necessary to make guide display in a lower portion 86a of the standby mode screen 86 different from the guide display in the lower portion 80a of the standby mode screen 80 in Fig. 8.

[0050]

Next, with reference to Fig. 10, a third embodiment of the superposition type mobile telephone 30 in case that after a specific name was selected from data on an address book screen 92 displayed on the display surface 12 in the close state, automatic call-making by the clockwise opening operation is performed, and in case that a message creating screen 96 is displayed by the counterclockwise

opening operation, will be described.

[0051]

In the close state, the user operates the telephone by the side key 42 and the three directional lever 44 so that the address book screen 92 is displayed on the display surface 12. At this time, in a lower portion 92a of the address book screen 92, a guide is displayed, which indicates that automatic call-making is performed for telephone conversation in case that the clockwise opening operation is performed after the specified name was selected, and that the message creating screen 96 is displayed in case that the counterclockwise opening operation is performed.

[0052]

In case that the user selects a name of [Taro Yamada] in the close state and next performs the clockwise opening operation to put the telephone in the open state, the turn detecting section 64 detects this operation and outputs a signals corresponding to its operation to the CPU 62 (refer to Fig. 6). The CPU judges on this basis of this signal that the telephone 30 has been put in the open state by the clockwise turn from the close state, and reads from the ROM 66 an application which is set so as to be started in case that the telephone 30 has been put in the open state by the clockwise turn when the address book screen 92 is displayed in the close state.

[0053]

Since the application for automatic call-making by which a call is automatically made to the person selected from the data on

the address book screen 92 is set in the ROM 66 so as to be started in this case, the CPU 62 reads out the stored telephone number of the person, 「Taro Yamada」 on the basis of this setting, and operates the radio section 70 thereby to cause a dialer to perform the automatic call-making. On the display surface 12, a standby mode screen during call-making 94 is displayed.

[0054]

In case that the user selects a name of 「Taro Yamada」 from the data on the address book screen 92 in the close state and next performs the counterclockwise opening operation to put the telephone in the open state, the turn detecting section 64 and the CPU 62 perform the operations similar to those in case that the user performs the clockwise opening operation to put the telephone in the open state. Hereby, an application for message is started, and a message creating screen 96 is displayed on the display surface 12. Further, the address becomes automatically 「Taro Yamada」 selected on the address book screen 92.

[0055]

Further, Fig. 11 shows a fourth embodiment as another embodiment than the embodiment shown in Fig. 10. After the specific name was selected from the data on the address book screen 92 in the close state, in case that the user performs the counterclockwise opening operation, a message reception box screen 102 of mail message application may be displayed, and heading of the reception message from the person selected on the address book screen 92 may be searched

from the data on this message reception box screen 102 and displayed.

[0056]

In the embodiments shown in Figs. 8 to 11, the specific examples are shown, in which the first housing 32 turns in relation to the second housing 34 clockwise or counterclockwise in the close state and they open, whereby the applications and the screens which are different from the applications and the screens which are operated in the close state are started. In the superposition type mobile telephone 30, not only these applications and screens shown in the specific examples but also various applications and screens can be started.

[0057]

For example, in a fifth embodiment shown in Fig. 12, in case that the telephone is put in the open state by the clockwise opening operation from the state where a message reception box screen 104 is displayed in the display section 12 in the close state, an application for automatic call-making is started, a call is automatically made to a sender of reception message, and a standby mode screen 106 during call-making is displayed. Further, in case that the telephone is put in the open state by the counterclockwise opening operation, an application for mail message is started and a message creating screen 108 to the sender of reception message is displayed.

[0058]

Further, as another embodiment than the embodiment shown in

Fig. 12, a sixth embodiment is shown in Fig. 13. In case that the telephone is put in the open state by the counterclockwise opening operation from the state where a message reception box screen 110 is displayed in the close state, an application for media player is started, a melody attached to the reception message is reproduced, and a media player screen 114 is displayed.

[0059]

In a seventh embodiment shown in Fig. 14, in case that the telephone is put in the open state by the clockwise opening operation from the state where an incoming call history screen 116 is displayed in the close state, the application for automatic call-making is started, a call is made to the sender recorded in the incoming-call history, and the standby mode screen during call-making 106 is displayed. In case that the telephone is put in the open state by the counterclockwise opening operation, the application for mail message is started and the message creating screen 108 to the sender of the reception message is displayed.

[0060]

In an eighteenth embodiment shown in Fig. 15, in case that the telephone is put in the open state by the clockwise opening operation from the state where an image reproduction screen 122 is displayed in the close state, an image editing screen 124 on which editing work such as addition of comment can be performed is displayed. Further, in case that the telephone is put in the open state by the counterclockwise opening operation, an application for mail message

is started, and a message creating screen 126 on the message to which an image is attached is displayed.

[0061]

As shown in Figs. 12 to 15, the first housing 32 turns clockwise or counterclockwise from the close state thereby to open the telephone, whereby the various applications and screens can be started. In order to cause the user to recognize this, guides corresponding to the applications and screens started by the opening operation are displayed on lower portions 104a, 110a, 116a and 122a of the message reception box screen 104, the message reception box screen 110, the incoming-call history screen 116 and the image reproduction screen 122 shown in Figs. 12 to 15.

[0062]

Though the specific examples in case that the opening operation is performed from the close state have been described in Figs. 8 to 15, the superposition type mobile telephone 30, also in case that the closing operation is performed from the opening state, can start the applications set in the ROM 66.

[0063]

For example, as shown in a ninth embodiment shown in Fig. 16, from the state where a message creating screen 128 is displayed in the open state, the clockwise closing operation is performed to put the telephone in the close state, whereby a camera screen 130 can be displayed. Further, the counterclockwise closing operation is performed to put the telephone in the close state, whereby a GPS

(Global Positioning System) screen 132 can be displayed.

[0064]

Also in this case, in a lower portion 128a of the message creating screen 128, a guide is displayed, which indicates that the camera function is started by the clockwise closing operation, and the GPS function is started by the counterclockwise closing operation.

[0065]

Further, regarding the various screens 80 to 132 shown in Figs. 8 to 16, when the telephone is put in the open state from the close state or when the telephone is put in the close state from the open state, the upside of each screen on the display surface 12 is turned down. Therefore, in such the case, the display of the screen is naturally reversed at an angle of 180°.

[0066]

Further, regarding the various screens which have been described in each embodiment and denoted by the reference numerals 80 to 132, that is, the standby mode screen, the address book screen, the menu selection screen, the e-mail menu screen, the standby mode screen during call-making, the message creating screen, the message reception box screen, the media player screen, the incoming-call history screen, the image reproduction screen, the image editing screen, the camera screen, and the GPS screen, as long as screens are equivalent to these screens, names are not limited to these names, and the design of the screen is not also limited to the shown design.

[0067]

Further, though the superposition type portable terminal unit comprising the two housings has been shown in the above embodiments, the invention can be applied also to a superposition type portable terminal unit comprising more than three housings on the basis of the similar technical idea.

[0068]

Further, though the invention is applied to the mobile telephone in the above embodiments, it can be similarly applied to other portable terminal units such as the PDA.

[0069]

[Advantage of the Invention]

As described above, according to the superposition type portable terminal unit of the invention, it is possible to make the first screen displayed in the display section in case that the first housing is turned in relation to the second housing clockwise differ from the second screen displayed in the display section in case that the first housing is turned in relation to the second housing counterclockwise. Therefore, since the various functions can be added to the opening and closing operations, the operating performance of the superposition type portable terminal unit can be improved.

[0070]

Therefore, since the application and the screen can be selected and started by only the opening and closing operations of the first

housing and the second housing, the operating performance of the superposition type portable terminal unit can be improved, and the operation for starting the desired application and screen can be simplified, so that the superposition type portable terminal unit of the invention is convenient.

[0071]

Further, the operation by the opening or closing operation of the first and second housings is entirely different from the operation by the ten key or the cross key, and the user can clearly distinguish the operation by the opening or closing operation from the operation by the ten key or the cross key. Therefore, similarly, the operating performance of the superposition type portable terminal unit can be improved.

[Brief Description of the Drawings]

[Fig. 1] It is a front view showing a state where a superposition type mobile telephone 30 according to one embodiment of the invention is closed.

[Fig. 2] It is a left side view of the superposition type mobile telephone 30 in Fig. 1.

[Fig. 3] It is a front view showing a state where the superposition type mobile telephone 30 in Fig. 1 is opened.

[Fig. 4] It is a rear diagram of the superposition type mobile telephone 30 in Fig. 3.

[Fig. 5] It is a partially enlarged view showing a three directional lever 44 of the superposition type mobile telephone 30

in Fig. 1.

[Fig. 6] It is a block diagram showing a circuit of the superposition type mobile telephone 30 according to one embodiment of the invention.

[Fig. 7] It is a diagram showing a turn state of a first housing 32 of the superposition type mobile telephone 30 in relation to a second housing 34 and their positions.

[Fig. 8] It is a diagram showing, in a first embodiment, a standby mode screen 80 displayed on a display surface 12 in the close state, and an address book screen 82 and a menu selection screen 84 which are displayed in the open state.

[Fig. 9] It is a diagram showing, in a second embodiment, a standby mode screen 86 displayed on the display surface 12 in the close state, and an address book screen 82 and an E-mail menu screen 90 which are displayed in the open state.

[Fig. 10] It is a diagram showing, in a third embodiment, an address book screen 92 displayed on the display surface 12 in the close state, and a standby mode screen during call-making 94 and a message creating screen 96 which are displayed in the open state.

[Fig. 11] It is a diagram showing, in a fourth embodiment, the address book screen 92 displayed on the display surface 12 in the close state, and the standby mode screen during call-making 94 and a message reception box screen 102 which are displayed in the open state.

[Fig. 12] It is a diagram showing, in a fifth embodiment, a

message reception box screen 104 displayed on the display surface 12 in the close state, and a standby mode screen during call-making 106 and a message creating screen 108 which are displayed in the open state.

[Fig. 13] It is a diagram showing, in a sixth embodiment, a message reception box screen 110 displayed on the display surface 12 in the close state, and the standby mode screen during call-making 106 and a media player screen 114 which are displayed in the open state.

[Fig. 14] It is a diagram showing, in a seventh embodiment, an incoming-call history screen 116 displayed on the display surface 12 in the close state, and the standby mode screen during call-making 106 and the message creating screen 108 which are displayed in the open state.

[Fig. 15] It is a diagram showing, in an eighth embodiment, an image reproduction screen 122 displayed on the display surface 12 in the close state, and an image editing screen 124 and a message creating screen 126 which are displayed in the open state.

[Fig. 16] It is a diagram showing, in a ninth embodiment, a message creating screen 128 displayed on the display surface 12 in the open state, and a camera screen 130 and a GPS screen 132 which are displayed in the close state.

[Description of Reference Numerals and Signs]

2 Folded-up type mobile telephone

4, 6 Housing

10 Inner surface
11 Display section
12 Display surface
13 Speaker
14 Inner surface
15 Microphone
16 Operation section
17 Main operation section
18 Cross key
20 Ten key
30 superposition type mobile telephone
32 First housing
34 Second housing
36 Coupling part
38, 40 Side surface
42 Side key
44 Three directional lever
46 Camera
48 Mirror
50 Microphone for image-recording
62 CPU
64 Turn detecting section
66 ROM
68 RAM
70 Radio section

72 Antenna portion

80 Standby mode screen

80a Lower portion

82 Address book screen

84 Menu selection screen

86 Standby mode screen

86a Lower portion

90 E-mail menu screen

92 Address book screen

92a Lower portion

94 Standby mode screen during call-making

96 Message creating screen

102, 104 Message reception box screen

104a Lower portion

106 Standby mode screen during call-making

108 Message creating screen

110 Message reception box screen

110a Lower portion

114 Media player screen

116 In-coming call history screen

116a Lower portion

122 Image reproduction screen

122a Lower portion

124 Image editing screen

126, 128 Message creating screen

- 128a Lower portion
- 130 Camera screen
- 132 GPS (Global Positioning System) screen